

UPR Series

- Super low ESR at a high frequency range
- High ripple current capability
- 2,000 hours at 105°C



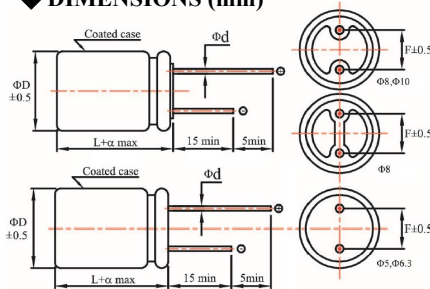
SPECIFICATIONS

| Item | Performance Characteristics | |
|---|--|-------------------------------|
| Category Temperature Range | -55 ~ +105°C | |
| Working Voltage Range | 2.5 ~ 16Vdc | |
| Surge Voltage | Rated Voltage x1.15 | |
| Capacitance Tolerance | M: ±20% (at 25°C and 120Hz) | |
| ESR | See the standard ratings table (at 25°C, 100~300KHz) | |
| Dissipation Factor (Tanδ) | See the standard ratings table (at 25°C, 120Hz) | |
| Leakage Current ※1 | See the standard ratings table (Impress the rated voltage for 2 minutes) | |
| Low Temperature Characteristics Impedance Ratio | Z(-25°C)/Z(+25°C) ≤ 1.15 at 100KHz Z(-55°C)/Z(+25°C) ≤ 1.25 at 100KHz | |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C | |
| | Capacitance change | ≤ ±20% of the initial value |
| | ESR | ≤ 150% of the specified value |
| | Dissipation factor(tanδ) | ≤ 150% of the specified value |
| | Leakage current | ≤ specified value |
| Damp Heat (Steady State) | The following requirements shall be satisfied when the capacitor are restored to 25°C after exposing them for 1,000 hours at 60°C 90 to 95% RH | |
| | Capacitance change | ≤ ±20% of the initial value |
| | ESR | ≤ 150% of the specified value |
| | Dissipation factor(tanδ) | ≤ 150% of the specified value |
| | Leakage current | ≤ specified value |

※1 In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 105°C

※2 ESR should be measured at both of the terminal ends closest to the capacitor body

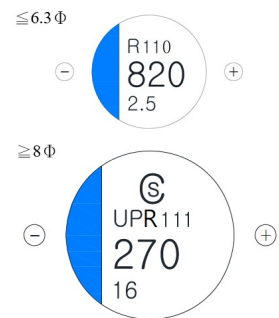
DIMENSIONS (mm)



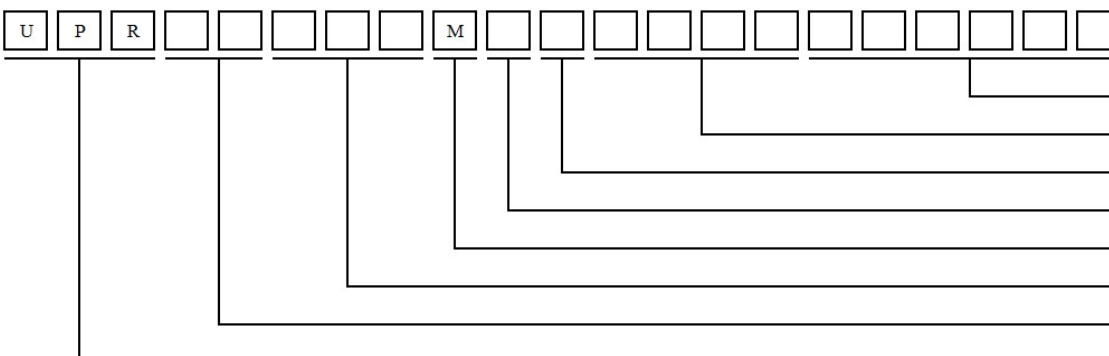
Lead

| ΦD | 5 | | 6.3 | | 8 |
|----|------|------|-----|-------|-----|
| Φd | 0.45 | 0.45 | 0.6 | 0.6 | 0.6 |
| L | 8 | 5 | 8 | 12~13 | 6 |
| α | 1 | 1 | 1 | 1.5 | 1 |
| F | 2 | 2.5 | 2.5 | 2.5 | 3.5 |

Marking



PART NUMBER SYSTEM





UPR Series

◆ **Standard Ratings**

| Rated Voltage (Vdc) | Rated Capacitance (μF) | Case Size ΦD×L (mm) | ESR 100~300KHz (mΩmax) | Rated Ripple Current 105°C,100KHz (mA rms max) | Tanδ max | Leakage Current (μA max) | Part Number |
|---------------------|------------------------|---------------------|------------------------|--|----------|--------------------------|--------------------|
| 2.5(0E) | 220 | 5×8 | 8 | 4340 | 0.10 | 500 | UPR0E221MNN0508 |
| | 330 | 5×8 | 8 | 4340 | 0.10 | 500 | UPR0E331MNN0508 |
| | 560 | 5×8 | 8 | 4340 | 0.10 | 500 | UPR0E561MNN0508 |
| | 560 | 6.3×8 | 8 | 4700 | 0.10 | 500 | UPR0E561MNN6308 |
| | 680 | 6.3×8 | 8 | 4900 | 0.10 | 500 | UPR0E681MNN6308 |
| | 820 | 6.3×8 | 8 | 5000 | 0.10 | 513 | UPR0E821MNN6308 |
| | 820 | 6.3×8 | 5 | 5900 | 0.10 | 513 | UPR0E821MNN6308E |
| 4(0G) | 560 | 6.3×8 | 8 | 4700 | 0.10 | 560 | UPR0G561MNN6308 |
| | 560 | 6.3×8 | 7 | 5600 | 0.1 | 560 | UPR0G561MNN6308RU |
| 6.3(0J) | 220 | 5×8 | 11 | 3200 | 0.10 | 300 | UPR0J221MNN0508 |
| | 220 | 6.3×8 | 9 | 3900 | 0.10 | 500 | UPR0J221MNN6308 |
| | 270 | 5×8 | 8 | 4050 | 0.10 | 500 | UPR0J271MNN0508 |
| | 270 | 6.3×8 | 8 | 4180 | 0.10 | 500 | UPR0J271MNN6308 |
| | 330 | 5×8 | 8 | 4050 | 0.10 | 500 | UPR0J331MNN0508 |
| | 330 | 5×8 | 15 | 3390 | 0.1 | 500 | UPR0J331MNN0508E |
| | 330 | 6.3×8 | 8 | 4700 | 0.10 | 500 | UPR0J331MNN6308 |
| | 390 | 6.3×8 | 8 | 4700 | 0.10 | 530 | UPR0J391MNN6308 |
| | 470 | 6.3×8 | 8 | 4700 | 0.10 | 592 | UPR0J471MNN6308(U) |
| | 470 | 6.3×8 | 7 | 5600 | 0.10 | 592 | UPR0J471MNN6308R |
| | 560 | 5×8 | 7 | 4180 | 0.10 | 500 | UPR0J561MNN0508 |
| | 560 | 6.3×8 | 8 | 4700 | 0.10 | 706 | UPR0J561MNN6308 |
| | 560 | 6.3×8 | 7 | 5600 | 0.10 | 706 | UPR0J561MNN6308E |
| | 680 | 6.3×8 | 8 | 4700 | 0.10 | 856 | UPR0J681MNN6308 |
| 820 | 6.3×8 | 8 | 4700 | 0.10 | 1033 | UPR0J821MNN6308 | |
| 1000 | 6.3×12 | 8 | 6100 | 0.10 | 1260 | UPR0J102MNN6312 | |
| 10(1A) | 100 | 5×8 | 35 | 2200 | 0.10 | 300 | UPR1A101MNN0508 |
| | 150 | 6.3×8 | 24 | 2820 | 0.10 | 480 | UPR1A151MNN6308 |
| | 220 | 6.3×8 | 8 | 4700 | 0.10 | 550 | UPR1A221MNN6308 |
| | 270 | 6.3×8 | 8 | 4700 | 0.10 | 540 | UPR1A271MNN6308 |
| | 330 | 6.3×8 | 8 | 4700 | 0.10 | 660 | UPR1A331MNN6308 |
| 16(1C) | 39 | 6.3×5 | 50 | 1620 | 0.12 | 312 | UPR1C390MNN6305 |
| | 100 | 6.3×5 | 24 | 2490 | 0.10 | 320 | UPR1C101MNN6305 |
| | 100 | 6.3×8 | 10 | 4680 | 0.10 | 320 | UPR1C101MNN6308 |
| | 220 | 6.3×8 | 10 | 4700 | 0.12 | 704 | UPR1C221MNN6308U |
| | 220 | 8×6 | 12 | 4150 | 0.12 | 704 | UPR1C221MNN0806 |
| | 270 | 6.3×8 | 10 | 5080 | 0.10 | 864 | UPR1C271MNN6308 |
| | 330 | 6.3×12 | 10 | 5000 | 0.10 | 1056 | UPR1C331MNN6312 |
| | 470 | 6.3×12 | 11 | 5300 | 0.12 | 200 | UPR1C471MNN6312L |
| | 470 | 6.3×13 | 11 | 5300 | 0.12 | 1504 | UPR1C471MNN6313SU |

PART NUMBER SYSTEM

◆ RADIAL LEAD TYPE

| Series | Rated Voltage | Capacitance | Tolerance | Lead Forming Type | Lead Length | Case Dimension | Special Request |
|--|---|--|--------------------------|--------------------------|--------------------------|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

(1) Series

| Series | DIP | UPS | UPR | UUL | UPE | URP | URH | UGP | UGV | UGS | UPC |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | SMD | VSG | VSP | VSU | VSE | | | | | | |

(2) Rated Voltage

| Code | 0E | 0J | 6K | 7H | 1A | 1B | AG | 1C | 1D | 1P | 1E | 1F | 1V | 1H | 1J | 2A |
|------|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|-----|
| WV | 2.5 | 6.3 | 6.8 | 7.5 | 10 | 12 | 14 | 16 | 20 | 22 | 25 | 30 | 35 | 50 | 63 | 100 |

(3) Capacitance

| Code | 6R8 | 100 | 180 | 560 | 101 | 181 | 561 | 102 | 182 |
|------|-----|-----|-----|-----|-----|-----|-----|------|------|
| μF | 6.8 | 10 | 18 | 56 | 100 | 180 | 560 | 1000 | 1800 |

(4) Capacitance Tolerance

| Code | J | Q | R | K | V | M | H |
|------|-----|-----------|----------|------|-----------|------|----------|
| % | ± 5 | +30 / -10 | +20 / -0 | ± 10 | +20 / -10 | ± 20 | +20 / -5 |

(5) Lead Type

| Code | C | P |
|-------------|---------|--------|
| Description | Cutting | Taping |
| Drawing | Fig 1 | Fig 2 |

(6) Lead Length (Cut / Formed lead)

| Code | 3 | 4 | U | 7 | D | X | R | B | E | G | 2 | M | T | N |
|-----------|------|-----|-----|------|---|-----|-----|------|-----|-----|-----------|-----|-----|-----------|
| Length | 3.5 | 4.5 | 5.5 | 7 | 4 | 2.3 | 2.5 | 2.8 | 3.1 | 3.3 | 2.5 | 3.5 | 3.8 | +20mm min |
| Tolerance | ±0.5 | | | ±0.2 | | | | ±0.3 | | | -15mm min | | | |

Taping Code

| Code | Z | 2 | 3 | 7 | 5 | S |
|-----------------------|-----|-----|-----|-----|-----|-----|
| Lead Pitch: +0.8/-0.2 | 2.0 | 2.5 | 3.5 | 3.5 | 5.0 | 5.0 |

(7) Case Dimension

| DIP Code | 0508 | 6305 | 6308 | 6311 | 0807 | 0808 | 0811 | 0816 | 0820 | 1012 | 1016 | 1020 |
|----------|-------|---------|---------|---------|-------|-------|-------|--------|--------|---------|-------|-------|
| Size | 5×8 | 6.3×5 | 6.3×8 | 6.3×11 | 8×7 | 8×8 | 8×11 | 8×16 | 8×20 | 10×12 | 10×16 | 10×20 |
| SMD Code | 5057 | 6343 | 6357 | 6377 | 6309 | 0867 | 0897 | 08C7 | 1077 | 10C4 | | |
| Size | 5×5.7 | 6.3×4.3 | 6.3×5.7 | 6.3×7.7 | 6.3×9 | 8×6.7 | 8×9.7 | 8×12.7 | 10×7.7 | 10×12.4 | | |

(8) Special Request

| Code | R | F | L | D |
|-------------|---------------------------|-----------|---------------------|------------------------|
| Description | High Rated ripple current | Endurance | Low Leakage Current | Low Dissipation Factor |
| Code | U | E | --- | --- |
| Description | Convex Rubber | Low ESR | --- | --- |

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



◆ MARKING AND DATE CODE

Trade mark(Chinsan)

| Trade Mark "CS" | Chinsan Solid Capacitor, Show on Dimension $\geq 8 \Phi$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|--|-----------------|----------------|-----------------|----------------|------|-----|------|----------------|-----------------|----------------|-----------------|----------------|------|-----|-----|------------------------|----|---|---|-------|-----|-----|-----|-----|-----|-----|------|---|---|---|-----------------------|-----|----|-------|------|-----|-----|-----|-----|-----|------|----|----|----|----|---|---|------|------|------|------|------|------|------|
| Code (Date Code) | <p>(1)DAY</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> <tr> <td>Week</td> <td>The first week</td> <td>The second week</td> <td>The third week</td> <td>The fourth week</td> <td>The fifth week</td> </tr> </table> <p>(2)Month</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> </tr> <tr> <td>Month</td> <td>Jan</td> <td>Feb</td> <td>Mar</td> <td>Apr</td> <td>May</td> <td>Jun</td> </tr> <tr> <th>Code</th> <th>7</th> <th>8</th> <th>9</th> <th>X</th> <th>Y</th> <th>Z</th> </tr> <tr> <td>Month</td> <td>July</td> <td>Aug</td> <td>Sep</td> <td>Oct</td> <td>Nov</td> <td>Dec</td> </tr> </table> <p>(3)Year</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>9</th> <th>0</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> <tr> <td>Year</td> <td>2019</td> <td>2020</td> <td>2021</td> <td>2022</td> <td>2023</td> <td>2024</td> </tr> </table> | Code | 1 | 2 | 3 | 4 | 5 | Week | The first week | The second week | The third week | The fourth week | The fifth week | Code | 1 | 2 | 3 | 4 | 5 | 6 | Month | Jan | Feb | Mar | Apr | May | Jun | Code | 7 | 8 | 9 | X | Y | Z | Month | July | Aug | Sep | Oct | Nov | Dec | Code | 9 | 0 | 1 | 2 | 3 | 4 | Year | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Code | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Week | The first week | The second week | The third week | The fourth week | The fifth week | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Code | 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Month | Jan | Feb | Mar | Apr | May | Jun | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Code | 7 | 8 | 9 | X | Y | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Month | July | Aug | Sep | Oct | Nov | Dec | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Code | 9 | 0 | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Year | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Series (Print Code) | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Series</th> <th>UPS</th> <th>UPR</th> <th>UUL</th> <th>UPE</th> <th>URP</th> <th>URH</th> <th>UGP</th> <th>UGV</th> <th>UGS</th> <th>UPC</th> <th>VSG</th> <th>VSP</th> <th>VSU</th> <th>VSE</th> </tr> </thead> <tbody> <tr> <td>$\Phi 5 \sim \Phi 6.3$</td> <td>--</td> <td>R</td> <td>L</td> <td>E</td> <td>--</td> <td>H</td> <td>P</td> <td>V</td> <td>--</td> <td>C</td> <td>G</td> <td>P</td> <td>U</td> <td>E</td> </tr> <tr> <td>$\Phi 8 \sim \Phi 10$</td> <td>UPS</td> <td>--</td> <td>UL</td> <td>UPE</td> <td>RP</td> <td>RH</td> <td>GP</td> <td>GV</td> <td>GS</td> <td>UPC</td> <td>SG</td> <td>SP</td> <td>SU</td> <td>SE</td> </tr> </tbody> </table> | Series | UPS | UPR | UUL | UPE | URP | URH | UGP | UGV | UGS | UPC | VSG | VSP | VSU | VSE | $\Phi 5 \sim \Phi 6.3$ | -- | R | L | E | -- | H | P | V | -- | C | G | P | U | E | $\Phi 8 \sim \Phi 10$ | UPS | -- | UL | UPE | RP | RH | GP | GV | GS | UPC | SG | SP | SU | SE | | | | | | | | | |
| Series | UPS | UPR | UUL | UPE | URP | URH | UGP | UGV | UGS | UPC | VSG | VSP | VSU | VSE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $\Phi 5 \sim \Phi 6.3$ | -- | R | L | E | -- | H | P | V | -- | C | G | P | U | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $\Phi 8 \sim \Phi 10$ | UPS | -- | UL | UPE | RP | RH | GP | GV | GS | UPC | SG | SP | SU | SE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

◆ LEAD FORMING TYPE

| Type | Part Number | Dimensions (Unit: mm) | | | | | | | | | | | | | | | | | |
|-----------|-------------|-----------------------|-----|------|--|-----------|-----|---|---|-----|-----|-----------|-----|-----|-----|-----|-----|--|--|
| | | ΦD | F | t | L (Part number for lead length and pitch for taping) | | | | | | | | | | | | | | |
| | | | | | 3 | 4 | U | 7 | D | X | R | B | E | G | 2 | M | T | | |
| | | | | | 3.5 | 4.5 | 5.5 | 7 | 4 | 2.3 | 2.5 | 2.8 | 3.1 | 3.3 | 2.5 | 3.5 | 3.8 | | |
| ± 0.5 | | | | | | ± 0.2 | | | | | | ± 0.3 | | | | | | | |
| Cut | C | 5 | 2 | ---- | | | | | | | | | | | | | | | |
| | | 6.3 | 2.5 | ---- | | | | | | | | | | | | | | | |
| | | 8 | 3.5 | ---- | | | | | | | | | | | | | | | |
| | | 10 | 5 | ---- | | | | | | | | | | | | | | | |

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



◆ TAPING

| Figure 1 | Symbol | Tolerance | Φ 5 | | Φ 6.3 | | Φ 8 | |
|----------|--------|--------------|------|------|----------|------|------|------|
| | | | PS | P5 | PS | P5 | PS | P5 |
| | Φd | ±0.05 | 0.45 | | 0.45/0.6 | | 0.6 | |
| | P | ±0.1 | 12.7 | | 12.7 | | 12.7 | |
| | P0 | ±0.2 | 12.7 | | 12.7 | | 12.7 | |
| | P1 | ±0.5 | 3.85 | | 3.85 | | 3.85 | |
| | P2 | ±1.0 | 6.35 | | 6.35 | | 6.35 | |
| | F | +0.8 -0.2 | 5 | | 5 | | 5 | |
| | H | ±0.5 | 17.5 | 18.5 | 17.5 | 18.5 | 17.5 | 18.5 |
| | H0 | ±0.5 | 16 | | 16 | | 16 | |
| | W | ±0.5 | 18 | | 18 | | 18 | |
| | W0 | Minimum | 12.5 | | 12.5 | | 12.5 | |
| | D0 | ±0.2 | 4 | | 4 | | 4 | |
| | t | ±0.2 | 0.7 | | 0.7 | | 0.7 | |

| Figure 2 | Symbol | Tolerance | Φ 6.3 | Φ 8 | | | Φ 10 | | |
|----------|--------|--------------|----------|------|----|------|------|----|----|
| | | | P2 | P3 | H3 | P7 | P5 | H5 | J5 |
| | Φd | ±0.05 | 0.45/0.6 | 0.6 | | | 0.6 | | |
| | P | ±0.1 | 12.7 | 12.7 | | | 12.7 | | |
| | P0 | ±0.2 | 12.7 | 12.7 | | | 12.7 | | |
| | P1 | ±0.5 | 5.1 | 4.6 | | | 3.85 | | |
| | P2 | ±1.0 | 6.35 | 6.35 | | | 6.35 | | |
| | F | +0.8 -0.2 | 2.5 | 3.5 | | | 5 | | |
| | H | ±0.5 | 118.5 | 18.5 | 20 | 17.5 | 18.5 | 20 | 21 |
| | H0 | ±0.5 | - | - | | | - | | |
| | W | ±0.5 | 18 | 18 | | | 18 | | |
| | W0 | Minimum | 12.5 | 12.5 | | | 12.5 | | |
| | D0 | ±0.2 | 4 | 4 | | | 4 | | |
| | t | ±0.2 | 0.7 | 0.7 | | | 0.7 | | |

| Figure 3 | Symbol | Tolerance | Φ 5 |
|----------|--------|--------------|------|
| | | | PZ |
| | Φd | ±0.05 | 0.45 |
| | P | ±0.1 | 12.7 |
| | P0 | ±0.2 | 12.7 |
| | P1 | ±0.5 | 5.35 |
| | P2 | ±1.0 | 6.35 |
| | F | +0.8 -0.2 | 2.0 |
| | H | ±0.5 | 18.5 |
| | H0 | ±0.5 | - |
| | W | ±0.5 | 18 |
| | W0 | Minimum | 12.5 |
| | D0 | ±0.2 | 4 |
| | t | ±0.2 | 0.7 |

Packing quantity

| Size | | Inner Box | Carton Box |
|------|-------|-------------|-------------|
| ØD | L | Q'ty (Pes.) | Q'ty (Pes.) |
| 5 | 8~12 | 2500 | 12500 |
| | 5.5 | 8~12 | 2200 |
| 6.3 | 5~12 | 2000 | 10000 |
| | 16 | 2000 | 10000 |
| 8 | 6~12 | 1000 | 5000 |
| | 16~22 | 1200 | 6000 |
| 10 | 7~12 | 800 | 4000 |
| | 16~22 | 800 | 4000 |